Attachment 8- Quality Assurance

Humboldt Bay Municipal Water District Groundwater Study

DWR Local Groundwater Assistance Grant Program, P84 LGA 2012 Application

BMS Electronic File: “Att8_LGA12_HBMWD_QA_1of1”

Humboldt Bay Municipal Water District (HBMWD) has included quality assurance/quality control (QA/QC) tasks in the proposed groundwater study. The geologic field investigations, seismic geophysics field investigations, sampling, monitoring, and groundwater model development will be conducted under the direction of California licensed engineers and registered geologists.

The proposed Project Manager, Patrick Kaspari, P.E. is a licensed California civil engineer, number C055722 and HBMWD's primary contract District Engineer. He will serve as the Project Director and be responsible for ensuring QA/QC tasks are performed during the course of this project.

GHD maintains a current formal QA/QC plan that will be followed for the project. GHD's standard JobFlow process requires a QA/QC plan be established and formally prepared at the outset of the project. The QA/QC plan includes an analysis that requires identification of risks that could occur during project performance and explicit steps and tasks which will be performed to monitor and mitigate identified risks. The QA/QC plan also includes the establishment of QC check points and designation of individuals who will perform the QC Check. All documents and process steps will have thorough QC reviews performed and established procedures will ensure that each review is indeed completed. This process will be documented.

Project deliverables (Data Summaries, Groundwater Study Report and groundwater model) will be peer-reviewed prior to release to HBMWD, HBMWD stakeholders, municipal customers, and the public. Errors discovered in the peer review process will be reported by the reviewer to the originator of the document, who will be responsible for corrective action.

QA/QC Monitoring Well Installation Oversight

Assessment of data quality will be an ongoing activity throughout the completion of the groundwater study. The following outlines the methods which will be used for evaluating the results obtained from the project:

- A QA/QC Officer (other than the Project Manager) will be assigned to the project and review project documentation (logbooks, boring and monitoring well construction logs, data tables, and report text) to ensure that the workplan was followed and that the soil boring and monitoring well installation activities were adequately documented and data was accurately transferred from collection to reporting. The QA/QC Officer will document deficiencies and the Project Manager will be responsible for corrective actions.
- Review of the sampling design will be conducted by the QA/QC Officer prior to the soil boring/monitoring well installation activities. The reviewer will submit comments to the Project Manager for action, comment or clarification. This process will be iterative.
- Data review will be conducted by the QA/QC Officer. The purpose of this review is to look for problems or anomalies in the implementation of data collection. The QA/QC officer will be onsite at the start of field investigations and whenever there is a change of lead field personnel to ensure that field procedures follow Standard Operating Procedures (SOPs). The QA/QC Officer will periodically review field procedures to ensure compliance with SOPs and this workplan.

The QA/QC Officer will have the authority to stop work or require alterations to the workplan if deviations from this workplan, the site specific health and safety plan, or SOPs occur during the performance of the work. QA/QC Officer will work with the Project Manager to ensure deviations are rectified prior to the recommencement of work.